

ARTICLE XVIII PERSONAL WIRELESS SERVICE FACILITIES OVERLAY DISTRICT

175-99. Purpose and Applicability.

- A. It is the express purpose of this Article to permit carriers to locate personal wireless service facilities within particular areas of the Town of Durham consistent with appropriate land use regulations that will ensure compatibility with the visual and environmental features of the Town. Compatibility with the visual features of Durham is measured based on the change in community scale and character in relation to the height, mass, materials, contrasts, or proportion within the surroundings of a proposed personal wireless service facility. This Article enables the review of the locating and siting of personal wireless service facilities by the Town of Durham so as to eliminate or mitigate the visual and environmental impacts of personal wireless service facilities. This Article is structured to encourage carriers to locate on existing buildings and structures whenever possible. New ground mounted personal wireless facilities are permitted, but only when the use of existing structures and buildings are found to be infeasible. Co-location is encouraged for all personal wireless service facility applications and the review of a personal wireless facility shall be on the basis of the site being built using all positions on the mount. The Town of Durham encourages the location of personal wireless service facilities (PWSF) in non-residential areas.
- B. The terms of this Article and the Site Plan Review Regulations shall apply to personal wireless service facilities proposed to be located on property owned by the Town of Durham, on privately owned property, and on property that is owned by any other governmental entity that acts in its proprietary capacity to lease such property to a carrier.

175-99.1 Definitions

The following terms apply to personal wireless service facilities.

Alternative Tower Structure - Innovative siting structures that include artificial trees, clock towers, bell steeples, light poles, and similar alternative-design mounting structures that camouflage or conceal the presence of antennas or towers.

Antenna - The surface from which wireless radio signals are sent and/or received by a personal wireless service facility.

Antenna Array - A collection of antennas attached to a mount to send and receive radio signals.

Average Tree Canopy Height - An average height found by inventorying the height at above ground level (AGL) of all trees over 20 feet in height for a defined area, such as the area delineated in Section 175-103.A.4.

Camouflaged - A personal wireless service facility that is disguised, hidden, part of an existing or proposed structure, or placed within an existing or proposed structure.

Carrier - A company that provides personal wireless services, also sometimes referred to as a provider.

Co-location - The use of a single mount on the ground by more than one carrier (vertical co-location) or the same carrier with multiple licenses, and/or the use of several mounts on an existing building or structure by more than one carrier or the same carrier with multiple licenses.

Concealment - The enclosure of a personal wireless service facility within a natural or human-made feature resulting in the facility being not visible from the outside or being part of the feature enclosing it.

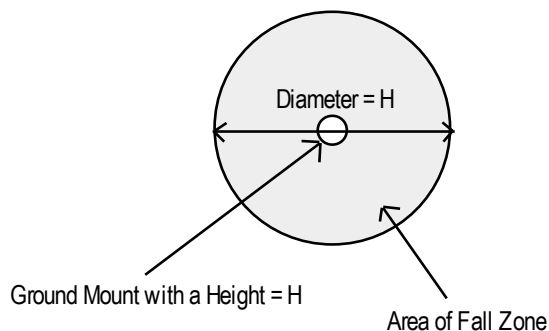
Disguise - Changing the appearance of a PWSF to appear to be something it is not.

Environmental Assessment (EA) - A document required by the Federal Communications Commission (FCC) and the National Environmental Policy Act (NEPA) when a personal wireless service facility is placed in certain designated areas.

Equipment Shelter - An enclosed structure, cabinet, shed, vault, or box near the base of the mount within which are housed equipment for personal wireless service facilities such as batteries and electrical equipment. Equipment shelters are sometimes referred to as base transceiver stations.

Fall Zone - The area on the ground from the base of a ground mounted personal wireless service facility that forms a circle with a diameter equal the height of the facility, including any antennas or other appurtenances, as set forth in Figure XVIII-1. The fall zone is the area within which there is a potential hazard from falling debris (such as ice) or collapsing material.

Figure XVIII-1



Guyed Tower - A monopole or lattice tower that is secured to the ground or other surface by diagonal cables for lateral support.

Height - The height above ground level (AGL) from the natural grade of a site to the highest point of a structure.

Lattice Tower - A type of mount with multiple legs and structural cross-bracing between the legs that is self-supporting and free-standing.

Mast - A thin pole that resembles a street light standard or a telephone pole. A dual-polarized antenna is typically deployed on a mast.

Monopole - A thicker type of mount than a mast that is self-supporting with a single shaft of wood, steel, concrete, or other material, that is designed for the placement of antennas and arrays along the shaft.

Mount - The structure or surface upon which antennas are mounted, including the following four types of mounts:

1. Roof-mounted. Mounted on the roof of a building.
2. Side-mounted. Mounted on the side of a building.
3. Ground-mounted. Mounted on the ground.

4. **Structure-mounted.** Mounted on a structure other than a building.

Personal Wireless Service Facility – Facility for the provision of personal wireless services, as defined by the Telecommunications Act of 1996, as amended. Personal Wireless Service Facilities include a mount, antenna, equipment shelter, and other related equipment. Specific Definitions pertinent to Personal Wireless Service Facilities follow.

Personal Wireless Services - The three types of services regulated by this Ordinance: Commercial mobile radio services, unlicensed wireless services, and common carrier wireless exchange access services as described in the Telecommunications Act of 1996, as amended.

Radio Frequency (RF) Engineer - An engineer specializing in electrical or microwave engineering, especially the study of radio frequencies.

Radio Frequency Radiation (RFR) - The emissions from personal wireless service facilities.

Security Barrier - A wall, fence, or berm that restricts an area from unauthorized entry or trespass.

Separation - distance between one carrier's array of antennas and another carrier's array.

175-100. District Regulations.

- A. **Location.** Personal wireless service facilities shall be permitted in all Zoning Districts, except as restricted by this Article. Applicants seeking approval for personal wireless service facilities shall first evaluate existing structures for the siting of personal wireless service facilities. Only after finding that there are no suitable existing structures pursuant to Section 175-101. C. herein, shall a provider propose a new ground mounted facility. Applicants for new PWSF shall place antennas and towers at locations which will minimize the impact on residential neighborhoods. In no case shall a PWSF be allowed in designated conservation areas unless they are located on existing tower facilities.
- B. **Existing Structures – Policy.** Personal wireless service facilities shall be located on existing structures, including but not limited to buildings, water towers, existing telecommunications facilities, utility poles or towers, and related facilities, provided that such installation preserves the character and integrity of those structures.
- C. **Existing Structures – Burden of Proof.** The applicant shall have the burden of proving that there are no existing structures which are suitable to locate its personal wireless service facility and/or transmit or receive radio signals. To meet that burden, the applicant shall take all the following actions to the extent applicable:
 1. The applicant shall submit to the Department of Planning and Community Development a list of all contacts made with owners of potential sites regarding the availability of potential space for a personal wireless service facility. If the Planning Board or Department of Planning and Community Development informs the applicant that additional existing structures may be satisfactory, the applicant shall contact the property owner(s) of those structures.
 2. The applicant shall provide copies of all letters of inquiry made to owners of existing structures and letters of rejection. If letters of rejection are not provided, at a minimum, unanswered “Return Receipt Requested” forms from the U.S. Post office shall be provided for each owner of existing structures that was contacted.

3. If the applicant claims that a structure is not capable of physically supporting a personal wireless service facility, this claim must be certified by a licensed professional civil engineer. The certification shall, at a minimum, explain the structural issues and demonstrate that the structure cannot be modified to support the personal wireless service facility without unreasonable costs. The estimated cost shall be provided to the Planning Board.
- D. ***Ground Mounted Facilities – Policy.*** If the applicant demonstrates that it is not feasible to locate on an existing structure, ground mounted personal wireless service facilities shall be designed so as to be camouflaged to the greatest extent possible, including but not limited to: use of alternative tower structures, use of compatible building materials and colors, screening, landscaping, and placement within trees. If the applicant does not propose the use of alternative tower structures, then the applicant shall provide evidence as to why it is unsuitable. Costs of alternative tower structures that exceed regular tower or antenna development shall not be presumed to render the alternate tower structure unsuitable.
- E. ***Locations for Ground Mounted Facilities.*** Ground mounted personal wireless service facilities shall be prohibited from those areas identified on the “Town of Durham, NH Visual Sensitivity Project - Composite Overlay,” dated March 13, 1998, and prepared by Strafford Regional Planning Commission using data from the original map created by Complex Systems Research Center, Institute for the Study of Earth, Oceans, and Space, University of New Hampshire. The “Town of Durham, NH Visual Sensitivity Project - Composite Overlay” is hereby adopted as an overlay to the official Zoning Map of the Town of Durham and incorporated in this Article by reference. If the site is within or adjacent to a residential zone, then a study shall be provided showing which alternative sites that are not within or adjacent to a residential zone were considered and why these locations are not acceptable.
- F. ***All PWSF – Policy.*** All applicants for PWSF shall submit information related to the availability of alternative technologies. If no alternative technologies exist to accommodate the applicant’s proposed PWSF, then the applicant shall submit evidence to demonstrate that no alternative technologies can accommodate the applicants proposed PWSF and said evidence may include, but is not limited to, the following: that an alternative technology that does not require the use of towers or structures, such as a cable microcell network using multiple low-powered transmitters/receivers attached to a wire line system, is unsuitable. Costs of alternative technology that exceed new tower or antenna development shall not be presumed to render the technology unsuitable.

175-101. Use Regulations.

A personal wireless service facility shall require a building permit in all cases and may be permitted as follows:

- A. ***Existing Tower Structures.*** Subject to the issuance of a building permit that includes review by the Director of Planning and Community Development, carriers may locate a personal wireless service facility on any guyed tower, lattice tower, mast, or monopole in existence prior to the adoption of this Article, or on any personal wireless service facility previously approved under the provisions of this Article so long as the co-location complies with the approved site plan. All the Performance Standards from this Article shall be met. This provision shall apply only so long as the height of the mount is not increased, a security barrier already exists, and the area of the security barrier is not increased. Otherwise, site plan review is required.

- B. ***Reconstruction of Existing Tower Structures.*** An existing guyed tower, lattice tower, monopole, or mast in existence prior to the adoption of this Article may be reconstructed with a maximum 20-foot increase in height so as to maximize co-location so long as the standards of this Article are met and so long as this 20-foot increase in height does not cause a facility previously existing at less than 200 feet to exceed 200 feet in height. The mount shall be replaced with a similar mount that does not significantly increase the visual impact on the community. Site plan review is required.
- C. ***Existing Structures.*** Subject to the provisions of this Article and site plan review and except as otherwise permitted under Section 175-101.A, a carrier may locate a personal wireless service facility on an existing structure, building, utility tower or pole, or water tower. If siting on a utility pole, the protrusions from the face of the pole should be no greater than ½ the diameter of the pole itself and in no cases greater than 12 inches. If antennas are included in a random shield on top of the pole, the shield shall have a maximum overhang of 4 inches. In no instance shall the pole be wider than the minimum necessary to support the proposed equipment. Both Cellular and PCS can use dual-polarized antennas.
- D. ***Ground Mounted Facility.*** A personal wireless service facility involving construction of a ground mount shall require site plan review and be subject to the provisions of this Article.

175-102. Dimensional Requirements.

- A. Personal wireless service facilities shall comply with the following requirements:
1. **Height, Maximum.** In no case shall a personal wireless service facility exceed 200 feet in height, unless the mount for the facility was greater than 200 feet in height prior to the adoption of this Article. The applicant shall demonstrate by technological evidence that the height requested is the minimum height necessary to fulfill the site's function.
 2. **Height, Existing Structures and Utility Poles.** Carriers that locate new personal wireless service facilities on water towers, electric transmission and distribution towers, utility poles and similar existing utility structures, guyed towers, lattice towers, masts, and monopoles may be permitted to increase the height of those structures no more than 20 feet. This increase in height shall only be permitted once for each structure.
 3. **Height, Other Existing Structures.** The height of a personal wireless service facility shall not increase the height of a structure by more than 10 feet, unless the facility is completely camouflaged; for example a facility completely within a flagpole, steeple, or chimney. The increase in the height of the structure shall be in scale and proportion to the structure as originally configured. A carrier may locate a personal wireless service facility on a building that is legally non-conforming with respect to height, provided that the provisions of this Article are met.
 4. **Height, Ground-Mounted Facilities.** Ground-mounted personal wireless service facilities shall not project higher than 10 feet above the average tree canopy height within a 100 and 150-foot perimeter of the mount, security barrier, or designated clear area for access to equipment, whichever is greatest.
 5. **Setbacks.** All personal wireless service facilities and their equipment shelters shall comply with the building setback provisions of the zoning district in which the facility is located. Fences shall comply with the setback provisions of the zoning district in which the facility is located if the fence is 6 feet or more in height.

6. Fall Zone for Ground Mounts. In order to ensure public safety, the minimum distance from the base of any ground-mount of a personal wireless service facility to any property line, public road, habitable dwelling, business or institutional use, or public recreational area shall be, at a minimum, the distance equal to the fall zone, as defined in this Article. The fall zone may cross property lines, so long as the applicant secures a fall zone easement from the affected property owner(s). The area of the easement shall be shown on all applicable plans submitted to the Town, and the terms of the easement shall be provided as part of the site plan review.
 7. Fall Zone for Non-Ground Mounts. In the event that an existing structure is proposed as a mount for a personal wireless service facility, a fall zone shall not be required, but the setback provisions of the zoning district shall apply. In the case of pre-existing non-conforming structures, personal wireless service facilities and their equipment shelters shall not increase any non-conformity.
- B. ***Planning Board Flexibility.*** Heights - In reviewing a site plan application for a personal wireless service facility, the Planning Board may permit an increase in the height of a ground mounted facility up to 20 feet above the average tree canopy height, if no material increase in visual or environmental impacts will result from the increased height. The visual and environmental criteria of this Article and the Site Plan Review Regulations shall be the guidelines in making this determination.

175-103. Performance and Design Standards.

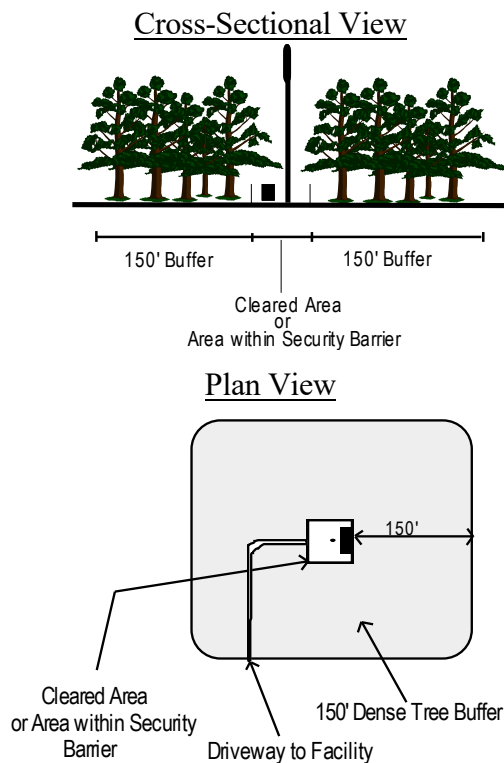
A. *Visibility*

1. Visual impacts are measured on the basis of:
 - a. Change in community scale, as exhibited in relative height, mass or proportion of the personal wireless service facility within their proposed surroundings.
 - b. New visible elements proposed on a contrasting background.
 - c. Different colors and textures proposed against a contrasting background.
 - e. Use of materials that are foreign to the existing built environment.
2. Enhancements are measured on the basis of:
 - a. Conservation of opportunities to maintain community scale, e.g., buffering areas and low-lying buildings should not be compromised so as to start a trend away from the existing community scale.
 - b. Amount and type of landscaping and/or natural vegetation.
 - c. Preservation of view corridors, vistas, and viewsheds.
 - d. Continuation of existing colors, textures, and materials.
3. Visibility focuses on:
 - a. Eliminating or mitigating visual impact.
 - b. Protecting, continuing, and enhancing the existing environment.
4. Concealment or Camouflage for Facilities on Existing Buildings or Structures - Roof Mounts: When a personal wireless service facility extends above the roof height of a building on which it is mounted, every effort shall be made to conceal or camouflage the facility within or behind existing or new architectural features to limit its visibility from

public ways. Facilities mounted on a roof shall be stepped back from the front facade in order to limit their impact on the building's silhouette.

5. Concealment or Camouflage for Facilities on Existing Buildings or Structures - Side Mounts: Personal wireless service facilities which are side mounted shall blend with the existing building's architecture and, if individual antenna panels are over 5 square feet, the panels shall be painted, shielded, or concealed with material consistent with the design features and materials of the building.
6. Camouflage for Ground Mounted Facilities: All ground-mounted personal wireless service facilities shall be surrounded by a buffer of dense tree growth that extends continuously for a minimum distance of 150 feet from the mount, security barrier, or designated clear area for access to equipment, whichever is greatest, and screens views of the facility in all directions, as set forth in Figure XVIII – 2. These trees must be existing on the subject property, planted on site, or be within a landscape easement on an adjoining site. The Planning Board shall have the authority to decrease, relocate, or alter the required buffer based on site conditions. The 150-foot vegetative buffer area shall be protected by a landscape easement or be within the area of the carrier's lease. The easement or lease shall specify that the trees within the buffer shall not be removed or topped, unless the trees are dead or dying and present a hazard to persons or property.
7. Disguise for Facilities on Existing Buildings and Structures (Roof and Side Mounts) and Ground Mounted Facilities: Applicants may choose to change the appearance of the facility to make it appear to be something other than a PWSF.

Figure XVIII-2



- B. ***Color*** - To the extent that any personal wireless service facilities extend above the height of the vegetation immediately surrounding it, they shall be of a color which blends with the background or surroundings.
- C. ***Equipment Shelters*** - Equipment shelters for personal wireless service facilities shall be designed consistent with one of the following design standards:
1. Equipment shelters shall be located in underground vaults; or
 2. Equipment shelters shall be designed so that the shelters are architecturally consistent, with respect to materials and appearance, to the buildings in the area of the personal wireless service facility; or
 3. Equipment shelters shall be camouflaged behind an effective year-round landscape buffer, equal to the height of the proposed building, and/or wooden fence. The Planning Board shall determine the style of fencing and/or landscape buffer that is compatible with the neighborhood; or
 4. If mounted on a roof top, the equipment shelter shall be concealed or camouflaged so that the shelter either is not visible at grade or appears to be a part of the original structure.
- D. ***Lighting, Signage, and Security***
1. Lighting:
 - a. The mounts of personal wireless service facilities shall be lighted only if required by the Federal Aviation Administration (FAA).
 - b. Lighting of equipment structures and any other facilities on site shall be shielded from abutting properties. Foot-candle measurements at the property line shall be 0.0 initial foot candles.
 2. Signage: Signs shall be limited to those needed to identify the property and the owner and warn of any danger. All signs shall comply with the requirements of the Article XXIII of the Durham Zoning Ordinance.
 3. Security Barrier: The Planning Board shall have final authority on whether a ground mounted personal wireless service facilities should be surrounded by a security barrier.
- E. ***Historic Buildings and Districts***
1. Any personal wireless service facility located on or within an historic structure shall not alter the character-defining features, distinctive construction methods, or original historic materials of the building.
 2. Any alteration made to an historic structure to accommodate a personal wireless service facility shall be fully reversible.
 3. Personal wireless service facilities authorized by this subsection shall be concealed within or behind existing architectural features, or shall be located so that they are not visible from public roads and viewing areas.
 4. Personal wireless service facilities located in the Durham Historic Overlay District shall comply with the provisions of Article XVII.
- F. ***Scenic Landscapes and Vistas*** - Personal wireless service facilities shall not be located within open areas that are visible from public roads, recreational areas, or abutting properties. All

ground-mounted personal wireless service facilities shall be surrounded by a buffer of dense tree growth as per Section 175-103.A.6.

- G. **Driveways** - Existing entrances and driveways to serve a personal wireless service facility shall be utilized, unless the applicant can demonstrate that a new entrance and driveway will result in less visual, traffic, and environmental impact. New driveways to serve a personal wireless service facility shall not exceed 12 feet in width. A gravel or crushed stone surface is encouraged.
- H. **Antenna Types** - Any antenna array placed upon an existing or proposed ground mount, utility pole, or transmission line mount shall have a diameter of no more than 4 feet, exclusive of the diameter of the mount. A larger diameter antenna array may be permitted after a finding by the Planning Board that the visual impacts of a larger antenna array are negligible.
- I. **Ground and Roof Mounts** - All ground mounts shall be of a mast type mount. Lattice towers, guyed towers, and roof mounted monopoles are expressly prohibited, unless constructed as part of a reconstruction project permitted under Section 175-102.B.
- J. **Hazardous Waste** - No hazardous waste shall be discharged on the site of any personal wireless service facility. If any hazardous materials are to be used on site, there shall be provisions for full containment of such materials. An enclosed containment area shall be provided with a sealed floor, designed to contain at least 100 and 110 percent of the volume of the hazardous materials stored or used on the site.
- K. **Noise** - Personal wireless service facilities shall not generate noise in excess of that permitted under the Durham Noise Ordinance for intermittent noise.
- L. **Radio Frequency Radiation (RFR) Standards** - All equipment proposed for a personal wireless service facility shall be fully compliant with the FCC Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (FCC Guidelines), under *Report and Order*, FCC 96-326, published on August 1, 1996, and all subsequent amendments.
- M. **Interference** - No antenna shall cause localized interference with the reception or transmission of any other communications signals including, but not limited to, public safety signals and television and radio broadcast signals. Certification by a qualified, licensed professional engineer that there will be no interference must be submitted.

175-104. Monitoring and Maintenance.

- A. **Maintenance** - The owner of the facility shall maintain the personal wireless service facility in good condition. Such maintenance shall include, but shall not be limited to, painting, structural integrity of the mount and security barrier, and maintenance of the buffer areas and landscaping.
- B. **Monitoring** - As part of the issuance of the site plan approval or building permit, the property owner shall agree that the Town of Durham may enter the subject property to obtain RFR measurements and noise measurements at the expense of the carrier. The Town shall provide reasonable written notice to the carrier and landowner and provide them the opportunity to accompany the Town representatives when the measurements are conducted.
- C. **Security for Removal** - Recognizing the hazardous situation presented by abandoned and unmonitored telecommunications facilities, the Planning Board shall set the form and amount of security that represents the cost for removal and disposal of abandoned telecommunications facilities in the event that a facility is abandoned and the facility owner is unwilling or unable

to remove the facility in accordance with Section 175-105.B. The amount of the security shall be based upon the removal cost plus, 15 percent, provided by the applicant and certified by a professional civil engineer licensed in New Hampshire. The owner of the facility shall provide the Planning Board with a revised removal cost estimate and structural evaluation prepared by a professional civil engineer licensed in New Hampshire every 5 years from the date of the Planning Board's approval of the site plan. If the cost has increased more than 15 percent then the owner of the facility shall provide additional security in the amount of the increase.

175-105. Abandonment or Discontinuation of Use.

- A. **Notification** - At such time that a carrier plans to abandon or discontinue operation of a personal wireless service facility, such carrier will notify the Town by certified U.S. mail of the proposed date of abandonment or discontinuation of operations. Such notice shall be given no less than 30 days prior to abandonment or discontinuation of operations. In the event that a carrier fails to give such notice, the personal wireless service facility shall be considered abandoned upon such discontinuation of operations.
- B. **Removal** - Upon abandonment or discontinuation of use, the owner of the facility shall physically remove the personal wireless service facility within 90 days from the date of abandonment or discontinuation of use. "Physically remove" shall include, but not be limited to:
 - 1. Removal of antennas, mount, equipment shelters and security barriers from the subject property.
 - 2. Proper disposal of the waste materials from the site in accordance with local and state solid waste disposal regulations.
 - 3. Restoring the location of the personal wireless service facility to its natural condition, except that any landscaping and grading shall remain in the after-condition.
- C. **Failure to Remove** - If the owner of the facility does not remove the facility upon the Zoning Administrator's order, then the Town Council shall, after holding a public hearing with notice to the owner and abutters, issue a declaration of abandonment. The owner of the facility shall dismantle and remove the facility within 90 days of receipt of the declaration of abandonment by the Town Council. If the abandoned facility is not removed within 90 days, the Town may execute the security to pay for this action.