

# CITY OF KETTERING

## DESIGN GUIDELINES FOR SMALL CELL FACILITIES & WIRELESS SUPPORT STRUCTURES

EFFECTIVE July 25, 2019

Approval  
  
P.E.  
City Engineer

Article I. BACKGROUND AND PURPOSE

Section 1.01 *Background.*

- (a) Ohio House Bill 478 (“HB 478”) modified a previously adopted Law regarding Wireless Service and the placement of Small Cell Facilities and Wireless Support Structures in city Rights of Way. It was passed on April 11, 2018, signed by the governor on May 2, 2018 and is effective as of August 1, 2018. The Law is intended to promote the rapid deployment of Small Cell Facility infrastructure within the Right of Way by ensuring that municipalities grant or deny consent to install, operate, modify, or replace Wireless Facilities in a timely manner. The Law recognizes the authority of a municipality to manage access to, and occupancy of, Rights of Way to the extent necessary with regard to matters of local concern. This includes the protection of the integrity of historic areas and ensures that the use of the Rights of Way in such districts is technologically and aesthetically appropriate.
- (b) Chapter 901 of the City of Kettering Codified Ordinances has been modified to account for the provisions of HB 478 for the regulation of Small Cell Facilities and Wireless Support Structures within the City’s Rights of Way.

Section 1.02 *Purpose.*

- (a) In addition to the requirements of Chapter 901, these Design Guidelines for Small Cell Facilities and Wireless Support Structures (“Design Guidelines”) provide aesthetic requirements and specifications that all Small Cell Facilities and Wireless Support Structures must meet prior to installation in the City of Kettering Right of Way.
- (b) The objective of the Design Guidelines is to strike a balance between preserving the character of the City of Kettering through careful design, siting, landscaping and camouflaging techniques to blend these facilities into their environment, while enhancing the ability of wireless communications carriers to deploy Small Cell Facilities and Wireless Support Structures in the City quickly, effectively, and efficiently so that residents, businesses, and visitors benefit from ubiquitous and robust wireless service availability.
- (c) The Design Guidelines are intended to allow sufficient flexibility to respond to and integrate future advances in Small Cell Facilities technology as well as innovations that improve the ability for these facilities to integrate into the surrounding environment. Due to the rapid advances in wireless technology, the Design Guidelines will be evaluated, and amended, periodically to ensure that the provisions respond and adapt accordingly to these evolving technologies.

Section 1.03 *Definitions.* Unless otherwise defined herein, capitalized terms used in these Design Guidelines will have the same meaning attributed to them in Kettering Codified Ordinances Chapter 901.

Section 1.04 *Applicability.* Placement, modification, and removal of any Small Cell Facility and/ or Wireless Support Structure shall comply with these Design Guidelines.

## Article II. MICRO WIRELESS PERMIT APPLICATIONS

### Section 2.01 *Pre-Application conference.*

- (a) The City encourages voluntary pre-submittal conferences to meet with potential Applicants and discuss projects on a conceptual level. The conference is intended to provide an overview of the Application content requirements for any given project, and also to create an informal forum in which Applicants and the City can discuss any concerns that should be addressed as soon as possible to avoid any unnecessary delays in the processing of an Application and deployment of Small Cell Facilities and Wireless Support Structures in the City. Pre-submittal conference is not required to submit an application.
- (b) An appointment is required for all pre-submittal conferences. City staff may establish regular hours in which appointments are available. City staff will endeavor to provide Applicants with an appointment within approximately five (5) business days after receipt of a written or email request. Each conference is generally limited to discussion of up to five potential projects, but Applicants may request to discuss additional projects provided that the additional time required does not impact other Applicants' ability to obtain an appointment.

### Section 2.02 *Applications.*

- (a) Prior to construction, modification, Co-location, replacement, or removal of a Small Cell Facility, relocation or removal of an existing Wireless Support Structure, installation of a new Wireless Support Structure, or Co-location on an existing Wireless Support Structure in the Right of Way, the person/Operator shall apply to the City and receive a Micro Wireless Permit from the City. Prior to submitting an Application for a Micro Wireless Permit, the Applicant must possess a Certificate of Registration, as required by the Codified Ordinances Chapter 901.
- (b) The City's consent will not be required for the replacement of a previously permitted Small Cell Facility and/ or Wireless Support Structure with a Small Cell Facility and/ or Wireless Support Structure, respectively, that is consistent with the Design Guidelines and is substantially similar to the existing Small Cell Facility and/ or Wireless Support Structure, or the same size or smaller than the existing Small Cell Facility and/ or Wireless Support Structure and complies with the requirements for Construction Permits as provided in Codified Ordinances Chapter 901.

### Section 2.03 *Application Requirements.*

- (a) *General Requirements For Micro Wireless Permit Applications.* The following items must be included in order for the Application to be considered complete.

- (i) *Contact Information.* Applicant must provide contact information, including the name of company seeking the Permit and the name of a designated point of contact along with his/her mailing address, email address, and phone number. Operator is responsible for providing updated contact information to the City when the contact information changes from that which was included in the Application. For the purposes of submitting an Application under this section, “Operator” also includes any Person that, at the time of filing the Application, provides the City the Person’s written authorization to perform the specific work for which an Application has been submitted on behalf of an Operator.
- (ii) *Aerial Map.* Applicant must include an aerial map showing the location of the proposed or existing support structure to which the Small Cell Facility is proposed to be attached, and a street view image.
- (iii) *Full Description.* Applicant must provide a full description of the number and dimensions of all Small Cell Facilities proposed to be installed and the Wireless Support Structure, either new or existing, to be utilized for each Small Cell Facility. If this information is fully included on the site plan, a separate narrative does not need to be provided.
- (iv) *Site and Other Plans and Structural Calculations.* Applicant must include fully dimensioned site plans, elevation drawings, and structural calculations prepared, sealed, stamped, and signed by a professional engineer licensed and registered by the State of Ohio (“Professional Engineer”). Site plans should utilize the scale of 1”=40’ and be submitted in pdf format at 11”x17.” Field of view should encompass at least one hundred feet (100’) in all directions of the Wireless Support Structure. Drawings must depict any known existing Wireless Facilities with all existing transmission equipment and other improvements, the proposed facility with all proposed transmission equipment and other improvements and the legal boundaries of the existing Right of Way and any associated access and utility easements. Acceptable sources for legal boundaries and utility easements should be discussed and determined during the pre-application conference. Fully dimensioned site plans shall indicate the spacing from existing curb, driveways, sidewalks, light poles, and any other poles or appurtenances. Site plans shall also include information regarding existing conditions within 100 feet of the proposed Wireless Support Structure, including, but not limited to: existing buildings, adjacent curb/edge of pavement, driveways, trees, landscaping, sidewalks/shared-use paths, Utilities in the Right of Way (both above ground and below ground), Wireless Support Structures (both with and without Small Cell Facilities attached), ground-mounted Small Cell Facilities, and any other pertinent information that accurately describes the existing conditions within the 100 feet vicinity of the proposed Wireless Support Structure. A traffic control plan must also be submitted. Other plans may also be required based on the proposed scope of work.
- (v) *Photo Simulations.* Applicant must include photo simulations from at least two reasonable line-of-site locations in the vicinity of the proposed project site. Photo simulations must be included in the site plans on a separate sheet.
- (vi) *Equipment Specifications.* For all equipment depicted on the plans, the Applicant must

include (1) the manufacturer's name and model number; (2) physical dimensions, including without limitation, height, width, depth and weight with mounts and other necessary hardware; and (3) the ambient noise level generated from the equipment, if any.

(vii) *Co-location on a City-owned Wireless Support Structure.* A structural assessment, sealed by a Professional Engineer. The structural assessment shall determine, with existing and proposed loading, the structural integrity and stability of the Wireless Support Structure, including, without limitation, foundation stability and soil interaction.

(b) *Small Cell Facilities.*

(i) *Size Limits.* Applicant must include scaled, dimensioned drawings or pictures with calculations to show strict conformity to the size limitations provided in Ohio Revised Code section 4939.01 for a Small Cell Facility.

(ii) *Confirmation of compliance with state and federal environmental regulations.* Applicant shall certify that the proposed Small Cell Facility and /or new Wireless Support Structure fully comply with all state and federal environmental regulations.

(iii) *RF Compliance Audit.* Applicant must submit a sworn affidavit prepared and signed by a professional RF engineer with knowledge about the proposed project that affirms the proposed project will be compliant with all applicable governmental regulations in connection with human exposure to radio frequency emissions.

(iv) *Electrical Service.* Applicant must provide sealed engineered drawings showing the proposed electrical service including, but not limited to conduit size, circuit size, calculations for Amp, distances running, etc. Applicant must obtain the appropriate permits from the Planning and Development Department prior to installation of the Small Cell Facility. Operator shall be responsible for obtaining any required electrical power service to the Small Cell Facility. Operator's electrical supply shall be separately metered from the City's electrical supply if a Co-location is proposed on a City-owned pole.

(v) Where ground-mounted small cell equipment cabinets are proposed, provide landscape plans at a scale not smaller than 1"=20' submitted in pdf format at 11"x17", including planting details and a plant schedule indicating proposed plant species, quantities, spacing, and height/size at installation.

(c) *Wireless Support Structures.*

(i) *Distance Analysis.* Applicant must provide an analysis showing that a proposed Wireless Support Structure is spaced at least five hundred (500) linear feet from a pole supporting a Small Cell facility, unless otherwise approved by the City in writing.

- (ii) *Size Limits.* Applicant must provide scaled dimensional drawings with calculations to show strict conformity to the size and maximum height limitations as set forth in these Design Guidelines.
- (d) *Applications involving Attachment to a Non-City-owned Wireless Support Structure.*
  - (i) *Owner's Authorization.* Applicant must submit evidence sufficient to show that either (1) Applicant owns the proposed support structure; or (2) Applicant has obtained the owner's authorization to file the Application.
- (e) *Applications involving removal of a Small Cell Facility and/or a Wireless Support Structure.*
  - (i) *Map.* Applicant must include an aerial map showing the location of the proposed removal, and a street view image.
  - (ii) *Full description of number and dimensions of facilities and/or structures to be removed.* Applicant must include a full description of the number and dimensions of all Small Cell Facilities and/or the support structure proposed to be removed.
  - (iii) *Full description of restoration of the Right of Way.* Applicant must include a full description of the steps to be involved in the removal and the actions that will be taken to restore the Right of Way.

**Section 2.04**     *Application Fee.* The Applicant must submit the Application fee of \$250 per Small Cell Facility or Wireless Support Structure. Fees for consolidated Applications apply to each location and are cumulative.

**Section 2.05**     *Application Submittal Procedures.* All Applications should be submitted in person to the City Engineering Department or through the City's website (see <https://www.ketteringoh.org/small-cell-facilities/> for more information). Applications must be submitted with the applicable fee and required documents to be considered duly filed. The Engineering Department may establish regular hours in which Applications may be submitted in person, but will generally receive Applications on working days between 8:00 a.m. and 4:00 p.m. Applications submitted by other means, including without limitation by mail, electronic mail, or outside the established submittal times, if any, will not be considered duly filed until acknowledged as having been received by the City.

**Section 2.06**     *Timeline for Application review.* The City will complete its review of each Application and provide a determination within the applicable period required by Law.

**Section 2.07**     *Tolling Review Time Limits.* The City may toll the timeline for review by mutual agreement between the Applicant and the City or as permitted under Codified Ordinance Section 901.111 or other applicable Law.

**Section 2.08**     *Incomplete Applications.* The City will conduct a preliminary review for completeness prior to accepting the Application. The City will not accept an Application that has been deemed incomplete during this preliminary review. If the City determines during its more detailed review that the Application is incomplete, the City will notify the

Applicant and suspend further review until the missing items are provided. Consistent with state and federal requirements, the City will toll the review timeline for incomplete Applications. If the City determines the Application is still incomplete after receipt of additional Application materials, the City will toll the timeline again until the Application is deemed complete.

Section 2.09 *Waiver.* The City may waive Application requirements if it deems the items are already in the City's possession from previous Applications, the Applicant previously filed information and specifications for standard materials that are being utilized in the new Application, or for other reasons deemed sufficient by the City.

Section 2.10 *Transfer.* No Micro Wireless Permit may be transferred to another party.

### Article III. SITING/LOCATIONS/PLACEMENT

Section 3.01 Generally, Small Cell Facilities and Wireless Support Structures shall be constructed and maintained in a manner that does not (1) obstruct, impede, or hinder the usual travel or public safety on a Right of Way; (2) obstruct the legal use of a Right of Way by other utility providers; (3) violate nondiscriminatory applicable codes; (4) violate or conflict with the City's Right of Way ordinance or these Design Guidelines; and (5) violate the federal Americans with Disabilities Act.

Section 3.02 *Historic or Architecturally Significant Structures.* Small Cell Facilities and Wireless Support Structures approved by the City after the enactment of these Design Guidelines may not be placed directly in front of any historic or architecturally significant structures in prominent or highly visible locations.

Section 3.03 *Obstructions.* Any new Small Cell Facility or Wireless Support Structure and other improvements associated with a new Small Cell Facility or Wireless Support Structure or an existing Small Cell Facility or Wireless Support Structure shall not obstruct any:

- (a) worker access to any above-ground or underground infrastructure for traffic control, streetlight or public transportation, including without limitation any curb control sign, parking meter, vehicular traffic sign or signal, pedestrian traffic sign or signal, barricade reflectors;
- (b) access to any public transportation vehicles, shelters, street furniture or other improvements at any public transportation stop (including, without limitation, bus stops, streetcar stops, and bike share stations);
- (c) worker access to above ground or underground infrastructure owned or operated by any public or private utility agency;
- (d) fire hydrant access;
- (e) access to any doors, gates, sidewalk doors, passage doors, stoops or other ingress and egress points to any building appurtenant to the Right of Way; or

- (f) access to any fire escape.

Section 3.04 *Undergrounding Requirements.* The City may deny requests to install structures and facilities in the Right of Way in an area where the City has required all structures and facilities except those owned by the City to be placed underground or elsewhere in the Right of Way or a utility easement. These areas are easily identifiable as those locations where electric has been placed underground; however, if an Applicant is uncertain as to whether such facilities have been placed underground in the area, the Applicant should contact the City for clarification before applying for or installing any Wireless Support Structures and/or Small Cell Facilities in the area. The Operator may request a waiver if the Operator is unable to achieve its service objective using a location in the Right of Way where the prohibition does not apply, in a utility easement the Operator has the right to access, or in or on other suitable locations or structures made available by the City at reasonable rates, fees and terms.

Section 3.05 *Residential Areas.* Residential areas are the least preferred areas for new Small Cell Facilities and Wireless Support Structures. In residential areas, an Operator shall use Best Efforts to install Wireless Support Structures so as to avoid obstructing the view of building facades by placing the Wireless Support Structure at a corner, intersection, or along a lot line. Wireless Support Structures should be installed in the yard location where other overhead utilities are located unless it is not technically feasible to do so. Applicants shall clearly explain the rationale for requests that deviate from this expectation.

Section 3.06 *Collocation Preference.* It is the City's strong preference that whenever an Applicant proposes to install a Wireless Support Structure with a Small Cell Facility attached within 500 feet from an existing Wireless Support Structure, the Applicant either Collocate on the existing Wireless Support Structure or demonstrate that a Collocation on the existing Wireless Support Structure is not technically feasible or space on the existing Wireless Support Structure is not available.

Section 3.07 *Spacing.*

- (a) The City strongly discourages more than one (1) new Wireless Support Structure per block and will not approve more than one per 500 feet on each side of the street to minimize the hazard of poles adjacent to roadways and minimize visual clutter and distractions to vehicular traffic. An exemption may be granted if the Operator can demonstrate that this restriction prohibits, or has the effect of prohibiting, wireless service to the location. Wireless Support Structures shall be spaced apart from utility poles or Wireless Support Structures supporting Small Cell Facilities at the same spacing between utility poles in the immediate proximity.
- (b) If multiple requests are received to install two or more poles that would violate the spacing requirement or to Collocate two or more Small Cell Facilities on the same Wireless Support Structure, priority will be given to the first request received that meets these Design Guidelines.



Section 3.08 *Alignment with Other Poles.* The centerline of any new Wireless Support Structure must be aligned, as much as possible, with the centerlines of existing poles on the same street segment, but only if the new structure's height does not conflict with overhead power utility lines and facilities.

Section 3.09 *City proposed alternative location for Wireless Support Structures.* The City may propose an alternate location to any proposed location of a new Wireless Support Structure, subject to the following:

- (a) The alternate location is within one hundred (100) feet of the proposed location;  
or
- (b) The alternate location is within a distance that is equivalent to the width of the Right of Way in which the new Wireless Support Structure is proposed, whichever is greater; and
- (c) The Applicant/Operator shall use the alternate location if it has the right to do so on reasonable terms and conditions and the alternate location does not impose technical limits or additional costs.

**Section 3.10** *Order of Preference for Siting Wireless Support Structures.* The following list indicates the order of preference for Wireless Support Structures for Small Cell Facilities.

- (a) *Existing Utility Poles.* It is the City's preference that Small Cell Facilities be installed on existing utility poles (electric or telephone) or lashed onto existing telephone or electrical lines between existing utility poles.
- (b) *Non-Ornamental City-owned Street Light Poles.* If the Applicant does not have the right to use existing utility poles or lines under reasonable terms and conditions or the utilization imposes technical limits, the City prefers that the Applicant next look to existing non-ornamental City-owned street light poles. For the purposes of these Design Guidelines, an ornamental pole means a pole or structure placed in the Right of Way to support traffic signals and/ or streetlights and which has been specifically designed and placed for aesthetic purposes. Ornamental poles will frequently, but not always, include appurtenances or attachments for flags, planters and/ or other aesthetic features.
- (c) *New Poles.* If existing utility poles and non-ornamental City-owned street light poles are unavailable, the City prefers the installation of a new pole to serve as a Wireless Support Structure.
- (d) *Ornamental City-owned Street Light Poles or Traffic Signal Poles.* The use of ornamental City-owned street light poles or traffic signal poles as Wireless Support Structures is discouraged. These should only be proposed if the three items listed above are unavailable or when requested by the City based on the proposed location.

Section 3.11 *Minimum Distance from Travelway.* In no case shall any portion of a new Wireless Support Structure or ground-mounted equipment be located less than two (2) feet from the travel way, edge line, face of curb, sidewalk, bike lane, or shared-use path as

measured to the nearest part of the Wireless Support Structure or Small Cell Facility.

Section 3.12 *Minimum Distance from Existing Objects in the Right of Way.* New Wireless Support Structures or ground-mounted equipment shall be located a minimum of twelve (12) feet from any permanent object or existing Lawful encroachment in the Right of Way to allow for access.

Section 3.13 *Minimum Distance from Intersections and Driveway Aprons.* Wireless Support Structures shall be located a minimum of twelve (12) feet from driveway aprons.

Section 3.14 *Minimum Distance from Trees.* Wireless Support Structures shall be sited outside of the critical root zone of existing street trees.

Section 3.15 *Encroachments Prohibited.* No portion of a Wireless Support Structure or Small Cell Facility cabinet or enclosure may encroach at grade or within the airspace beyond the Right of Way or over the travelway.

Section 3.16 Wireless Support Structures and Small Cell Facilities cabinets within transformer bases and associated Wireless Support Structures are prohibited to be located within sight visibility triangles of driveways and street intersections.

#### Article IV. DESIGN

##### Section 4.01 *Small Cell Facilities*

- (a) *Screening and Installation Location.* All Small Cell Facilities, associated equipment and cabling shall be concealed from view within an enclosure, and may be installed in the following locations: (i) within an equipment enclosure mounted to the Wireless Support Structure to which the Small Cell Facility is attached; (ii) within an equipment cabinet integrated within the transformer base of the Wireless Support Structure to which the Small Cell Facility is attached; or (iii) within a ground-mounted cabinet physically independent from the Wireless Support Structure to which the Small Cell Facility is attached.
- (b) *Undergrounded Equipment Vaults.* Equipment in an environmentally controlled underground vault may be required in some areas where technologically feasible and reasonable for the location.
- (c) Small Cell Facilities installed in an equipment enclosure mounted to a Wireless Support Structure shall be installed at least ten (10) feet above ground level measured from grade to the bottom of the enclosure. If a Small Cell Facility attachment is projecting toward the street, for the safety and protection of the public and vehicular traffic, the City may require the attachment to be installed no less than sixteen (16) feet above ground level.
- (d) The equipment shroud or cabinet must contain all the equipment associated with the Small Cell Facility other than the Antenna, electric disconnect switch, and electric meter. All cables and conduits associated with the equipment must be concealed from view, routed directly through the metal pole (with the exception of wood power poles) and

undergrounded between the pole and the ground-mounted cabinet.

- (e) For pole installations, the equipment shroud or cabinet must be installed on the side of the pole opposite the direction of vehicular traffic along the same side of the Right of Way.
- (f) *Maximum Size, exclusive of the Antenna.* All wireless equipment associated with the Small Cell Facility shall not cumulatively exceed twenty-eight (28) cubic feet in volume. The calculation of equipment volume shall not include Antenna, electric meters, concealment elements, telecommunications demarcation boxes, grounding equipment, power transfer switches, cut-off switches, and vertical cable runs for the connection of power and other services.
- (g) *Concealment.* Small Cell Facilities shall be concealed or enclosed as much as possible in an equipment box, cabinet, or other unit that may include ventilation openings. Unless approved by the City in writing, there shall be no external cables and wires hanging off a pole. The approved Small Cell Facility cabling or wiring shall be sheathed or enclosed in a conduit, so that wires are protected and not visible or are visually minimized to the extent possible.
- (h) *Equipment Enclosures.* Equipment enclosures, including electric meters and disconnect switches, shall be as small as possible. Ground-mounted equipment enclosures shall incorporate concealment elements into the proposed design. Concealment may include, but shall not be limited to, landscaping, strategic placement in less obtrusive locations, and placement within existing or replacement street furniture.
- (i) *Landscaping.* Landscape screening should be provided and maintained around exterior ground-mounted equipment enclosures. Plants used for screening must be evergreen. The planting quantity and size should be such that 100% screening is achieved within two years of installation. Tree “topping” or the improper pruning of trees is prohibited. Any proposed pruning or removal of trees, shrubs, or other landscaping already existing in the Right of Way must be noted in the Application and must be approved by the City. When underground vaults are proposed, they shall be located to minimize disruption to the placement of street trees. Adequate planting depth shall be provided between the top of the vault and the finished grade to allow plants to grow in a healthy condition.
- (j) *Antennas.*
  - (i) *Maximum Size.* All Antennas on a Wireless Support Structure shall be located entirely within a shroud enclosure of not more than six (6) cubic feet in volume.
  - (ii) The diameter of the Antenna or shroud shall not exceed the diameter of the top of the Wireless Support Structure pole, and to the maximum extent practical, shall appear as a seamless vertical extension of the Wireless Support Structure pole.
  - (iii) In no case shall the maximum diameter of the shroud be wider than one and one half times the diameter of the top of the pole.
  - (iv) Where maximum shroud diameter exceeds diameter of the top of the pole, the shroud shall be tapered to meet the top of the pole.

- (v) *Mounting Location.* All Antennas shall be mounted to the top of the Wireless Support Structure pole, aligned with the centerline of the structure. For Co-locations where existing conditions preclude this mounting location, Antennas shall be fully enclosed within a shroud attached as near as possible to the top of the pole and on the side of the pole opposite the direction of vehicular traffic along the same side of the Right of Way.
- (vi) *Shape.* Antennas shall be generally cylindrical in shape.
- (vii) *Color.* Color for all Antennas and shrouds shall match the color of the Wireless Support Structure as required by the Design Guidelines, or as otherwise approved by the City Engineer.

Section 4.02      *Wireless Support Structures.*

- (a) *Height.* In areas where there are no Wireless Support Structures or utility poles taller than thirty (30) feet in height above grade and the maximum allowable height for building construction in the underlying zoning district is thirty five (35) feet in height above grade or less, the overall height of a new Wireless Support Structure and any Co-located Antennas shall not be more than thirty five (35) feet in height above ground level. In all other areas, the overall height of a new Wireless Support Structure and any Antennas shall not be more than forty (40) feet in height above ground level.
- (b) *Existing Wireless Support Structures.* For an existing Wireless Support Structure, the Antenna and any associated shroud or concealment material are permitted to be Co-located at the top of the existing Wireless Support Structure and shall not increase the height of the existing Wireless Support Structure by more than five (5) feet.
- (c) *New Wireless Support Structures.* It is the City’s preference that all new Wireless Support Structures be camouflaged, except for those located in an area that is predominantly industrial. The Applicant shall submit their proposal for camouflage with the Permit Application.
- (d) It is the City’s strong preference that metal poles must be used for installation of new Wireless Support Structures. Fiber-Reinforced Polymer Poles meeting or exceeding ASCE MOP 104 – Recommended Practice for Fiber-Reinforced Polymer Products for Overhead Utility Line Structures (“Composite Poles”) may also be used where appropriate. New wood poles may only be used if it can be demonstrated that use of a metal pole would prohibit, or effectively prohibit, Wireless Service from being provided in the proposed location.
- (e) *Footings and Foundations.*
  - (i) All new metal poles must be supported with a reinforced concrete pier. The design including the pier, footings, and anchor bolts shall be stamped, sealed and signed by a Professional Engineer, and subject to the City’s review and approval. All anchor bolts must be concealed from public view with an appropriate pole boot or cover subject to the City’s prior approval.
  - (ii) If the City permits the installation of a new wood pole, the design, including the pole

and burry depth must be determined, stamped, sealed, and signed by a Professional Engineer, and subject to the City's review and approval. Composite Poles must be direct buried to a depth determined, stamped, sealed, and signed by a Professional Engineer, and subject to the City's review and approval.

- (f) *Metal Pole Material and Finish.* All metal poles must be constructed from aluminum. Unless another color is required in order to match the nearest City-owned metal pole, poles shall have a black anodized finish. If another color is necessary to match the color of the nearest City-owned metal pole, the Applicant may select a paint or powder coat system in compliance with ATSM standards and subject to City approval.
- (g) *Composite Pole Finish.* All Composite Poles must meet or exceed ASCE MOP 104 – Recommended Practice for Fiber-Reinforced Polymer Products for Overhead Utility Line Structures and be ultraviolet-light resistant and suitable for long-term outdoor exposure. Unless another color is required in order to match the nearest City-owned metal pole, Composite Poles shall have a matte black finish. If another color is necessary to match the color of the nearest City-owned metal pole, the Applicant may select a color system in compliance with ASCE or ATSM standards, and subject to City approval
- (h) Wireless Support Structures incorporating pole mounted Small Cell Facilities shall be tapered in diameter from the base to the top, with a maximum diameter of 12 inches at the base and a maximum diameter of 8 inches at the top.
- (i) Wireless Support Structures incorporating Small Cell Facilities in an equipment cabinet within a transformer base may utilize poles tapered in diameter or poles having a consistent outside diameter. Transformer bases shall be one-piece cast aluminum alloy base in a breakaway design, as designed and sealed by a Professional Engineer, and subject to the City Engineer's review and approval.
- (j) *Equipment Enclosures.* Equipment enclosures, including electric meters and disconnect switches, shall be as small as possible. Ground-mounted equipment shall incorporate concealment elements into the proposed design. Concealment may include, but shall not be limited to, landscaping, strategic placement in less obtrusive locations, and placement within existing or replacement street furniture.
- (k) *Location of Pole-Mounted Equipment.*
  - (i) Equipment attached to metal poles must be installed using stainless steel banding straps. When the straps are attached to a metal pole, they must match the color of the pole.
  - (ii) Equipment attached to wood poles may be bolted to the pole or installed using stainless steel banding straps. Throughbolting or use of lag bolts is prohibited.
  - (iii) All equipment other than the Antenna(s), electric meter and disconnect switch must be concealed within an equipment enclosure. Equipment enclosures may not extend more than 24 inches from the face of the pole. The equipment enclosures must be non-reflective, colored to match the existing pole if attached to a metal pole, and in the color of brushed aluminum if attached to a wood pole. Equipment cabinets should be mounted as flush to the pole as possible. Any standoff mount for the equipment cabinet

may not exceed four (4) inches.

- (iv) The equipment shroud or cabinet must contain all the equipment associated with the Small Cell Facility other than the Antenna. All cables and conduits associated with the equipment must be concealed from view, routed directly through the metal pole (with the exception of wood power poles) and undergrounded between the pole and the ground-mounted cabinet.
- (v) The pole and all attachments to the pole that are projecting, or any equipment or appurtenance mounted on the ground, shall comply with Americans with Disabilities Act and shall not obstruct an existing or planned sidewalk or walkway.
- (vi) Where multiple enclosures are proposed on a Wireless Support Structure, the enclosures shall be grouped as closely together as possible on the same side of the Wireless Support Structure.
- (vii) *Concealment of Gap.* Metal flaps or “wings” shall extend from the enclosure to the pole to conceal any gap between the enclosures and the pole. The design of the flaps shall be integrated with the design of the enclosure.
- (viii) Microwave or other wireless backhaul is discouraged when it would involve a separate and unconcealed Antenna.
- (ix) *Above-Ground Conduit:* If the City permits the installation of a new wood pole, all above-ground wires, cables and connections associated with the wood pole shall be encased in the smallest section or smallest diameter PVC channel, conduit, u-guard, or shroud feasible, with a maximum dimension of 4” diameter. Such conduit shall be finished in zinc, aluminum, or stainless steel, or colored to match the metal finishes.
- (x) *Lighting, Planters, Flags, Banners.* The City may require the Applicant to install functional streetlights and/or brackets to hold hanging flower planters, flags and/or banners when technically feasible and the City determines that such additions will enhance the overall appearance and usefulness to the City of the proposed Wireless Support Structure. The City may install hanging flower planters, flags and/or banners utilizing the brackets described in this paragraph.

Section 4.03      *City-Owned Wireless Support Structures.*

- (a) *Required Load Analysis.* Proposed installations on all City-owned poles shall have an industry standard pole load analysis completed, sealed, and signed by a Professional Engineer and submitted to the City with each Permit Application indicating that the City-owned pole to which the Small Cell Facility will be attached will safely support the load.
- (b) *Height of Attachments.* All attachments on all City-owned poles shall be at least ten (10) feet above Grade. If a Small Cell Facility is projecting toward the street, for the safety and protection of the public and vehicular traffic, the City may require the attachment to be installed no less than sixteen (16) feet above grade.
- (c) *Power Source.* A Small Cell Facility on a City-owned Wireless Support Structure may not

use the same power source that provides power for the original purpose of the Wireless Support Structure.

- (d) *Installations on Street Lights and Traffic Signals.* Installations on all street lights and traffic signals must not interfere with the integrity of the facility in any way that may compromise the safety of the public. The installation must not interfere with other existing uses on the pole such as traffic signals, street lights, hanging flower planters, flags, and/or banners. Installation of Small Cell Facilities on any traffic signal structure or street light shall (a) be encased in a separate conduit than the traffic signal/street light electronics; (b) have a separate electric power connection than the traffic signal/street light structure; and (c) have a separate access point than the traffic signal/street light structure.
- (e) *Installations on Sign Poles (15 feet or taller).* Installations on sign poles may only occur if the sign pole is fifteen (15) feet or taller.
- (f) *Reservation of space for future public safety or transportation uses.* An Application for space on a City-owned or operated Wireless Support Structure that conflicts with space reserved for future public safety or transportation uses documented in an approved plan in place at the time of the Application will be denied unless the Operator pays for the replacement of the pole or Wireless Support Structure and the replaced pole or Wireless Support Structure will accommodate the future use and the Small Cell Facility.
- (g) A pole attachment agreement will be required for any installation of a Small Cell Facility on a City-owned pole or Wireless Support Structure.

Section 4.04 *Ambient noise.* Ambient noise suppression measures and/or placement of the equipment in locations less likely to impact adjacent properties shall be required to ensure compliance with all applicable noise regulations.

Section 4.05 Where a Utility Corridor is present, all service lines from the power source to the Small Cell Facilities and Wireless Support Structure shall be located underground.

Section 4.06 Service lines must be undergrounded whenever feasible to avoid additional overhead lines. For metal poles, undergrounded cables and wires must transition directly into the pole base without any external junction box.

Section 4.07 *Spools and Coils.* To reduce clutter and deter vandalism, excess fiber optic or coaxial cables for Small Cell Facilities shall not be spooled, coiled, or otherwise stored on the pole except within the approved enclosure.

Section 4.08 *Electric Meters.* The City strongly encourages Operators to use flat-rate electric service when it would eliminate the need for a meter. When a meter is necessary, site Operators shall use the smallest and least intrusive electric meter available. Whenever permitted by the electric service provider, the electric meter base should be painted to match the pole.

Section 4.09 *Signage/Lights/Logos/Decals/Cooling Fans*

- (a) *Signage.* Operator shall post its name, location identifying information, and emergency telephone number in an area on the cabinet of the Small Cell Facility that is visible to the public. Signage required under this section shall not exceed 4" x 6", unless otherwise required by Law (e.g. RF ground notification signs) or the City. If no cabinet exists, the signage shall be placed at the base of the pole.
- (b) *Lights.* New Small Cell Facilities and Wireless Support Structures shall not be illuminated, except in accord with state or federal regulations, or unless illumination is integral to the camouflaging strategy such as design intended to look like a street light pole.
- (c) *Logos/Decals.* Operators shall remove or paint over unnecessary equipment manufacturer decals. New Small Cell Facilities and Wireless Support Structures shall not include advertisements and may only display information required by a federal, state, or local agency. Operators shall also utilize the smallest and lowest visibility radio-frequency (RF) warning sticker required by government or electric utility regulations and place the RF sticker as close to the Antenna as possible.
- (d) *Cooling Fans.* In residential areas, use a passive cooling system. In the event that a fan is needed, use a cooling fan with a low noise profile

Section 4.10 *Encroachments Prohibited.* No portion of a Wireless Support Structure or Small Cell Facility cabinet or enclosure may encroach at grade or within the airspace beyond the Right of Way or over the travelway.

## Article V. GENERAL

Section 5.01 *Compliance with all Applicable Laws.* Permittee shall at all times maintain compliance with all applicable federal, state and local Laws, regulations, ordinances, or other rules.

Section 5.02 *Right to Inspect.* The City or its designee may inspect a small cell facility or wireless support structure within the Right of Way. The permittee shall cooperate with all inspections. The City reserves the right to support, repair, disable, or remove any elements of the small cell facility or wireless support structure in emergencies or when the small cell facility or wireless support structure threatens imminent harm to persons or property.

Section 5.03 *Maintenance.* The site and the Small Cell Facility and/ or Wireless Support Structure, including but not limited to all landscaping, fencing, and related equipment, must be free from graffiti, dirt, debris, rust, corrosion, peeling paint, broken parts and maintained in accordance with all approved plans and conditions of approval.

Section 5.04 *General Construction.* All work and designs shall comply with the following general standards for construction in the City's Right of Way:

- (a) City of Kettering Codified Ordinances;
- (b) City of Kettering Standard Construction Drawings;



- (c) City of Kettering Construction and Material Specifications;
- (d) Ohio Department of Transportation (ODOT) Location and Design Manual;
- (e) ODOT Standard Drawings;
- (f) ODOT Construction and Material Specifications;
- (g) Ohio Manual of Traffic Control Devices;
- (h) American Association of State Highway Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets;
- (i) AASHTO Roadside Design Guide;
- (j) AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities;
- (k) AASHTO Guide for Development of Bicycle Facilities;
- (l) United States Access Board (USAB) Proposed Guidelines for Pedestrians in the Public Right of Way;
- (m) USAB American with Disabilities Act Accessibility Guidelines;
- (n) National Fire Protection Association 70 National Electric Code; and
- (o) all other applicable local, state, and federal codes and regulations.

Section 5.05 *Conflict with other Provisions.* In the event that any other applicable Law or code requires any more restrictive requirements, the most restrictive requirement shall control.

Section 5.06 *Severability.* The provisions of these Design Guidelines are severable. If any provision or subsection, or the Application of any provision or subsection to any person or circumstances, is held invalid, the remaining provisions, subsection, and Application of such to other persons or circumstances shall not be made invalid as well. It is declared to be the intent of this section that the remaining provisions would have been adopted had such invalid provisions not been included herein.

Section 5.07 *Installation and Inspection.*

- (a) *Completion within 180 days.* The Collocation of any Small Cell Facility or installation of any new Wireless Support Structure for which a Permit is granted shall be completed within one hundred and eighty (180) days after issuance of the Permit unless the City and the Applicant agree to extend this period. The City will agree to an extension if the delay is caused by: (a) make-ready work for a City-owned Wireless Support Structure; or (b) the lack of commercial power or backhaul availability at the site, provided that the Operator has made a timely request within sixty (60) days after the issuance of the Permit for commercial power or backhaul services. The additional time to complete installation may not exceed 360 days after the issuance of the Permit.

- (b) *Procedure for request for extension of time.* In situations when completion will not occur within 180 days after issuance of the Permit, the Applicant may request an extension of time for the reasons noted above. Such extension request must be completed utilizing the City's extension of time form, which will include the length of time being requested and the reason for the delay. The extension request must be filed with the Engineering Department.

Section 5.08 *Existing infrastructure restoration requirements.* As required by the City's Codified Ordinances Chapter 901, the permittee and/or its subcontractors shall leave the streets, alleys, and other public places where work is done in as good condition or repair as they were before such work was commenced and to the reasonable satisfaction of the City.

Section 5.09 *Interference with Operations.*

- (a) *No Liability.* The City shall not be liable to the Operator by reason of inconvenience, annoyance or injury to the Small Cell Facilities, Wireless Support Structures, and related ground- or pole-mounted equipment or activities conducted by the Operator therefrom, arising from the necessity of repairing any portion of the Right of Way, or from the making of any necessary alteration or improvements, in or to, any portion of the Right of Way, or in or to the City's fixtures, appurtenances or equipment.
- (b) *Signal Interference with City's Communications Infrastructure Prohibited.* In the event that an Operator's Small Cell Facility interferes with the public safety radio system, or the City's or State's traffic signal system, then the Operator shall, at its cost, immediately cooperate with the City to either rule out Operator as the interference source or eliminate the interference. Cooperation with the City may include, but shall not be limited to, temporarily switching the transmission equipment on and off for testing.

Section 5.10 *Requirements For Removal, Replacement, Maintenance And Repair.*

- (a) Replacement of Municipal-Owned Wireless Support Structure.
  - (i) When necessary to accommodate Small Cell Facility, the City may require, in response to an Application to Collocate a Small Cell Facility on a City-owned Wireless Support Structure, the replacement or modification of the Wireless Support Structure at the Operator's cost if the City determines that replacement or modification is necessary for compliance with construction and safety standards. Such replacement or modification shall conform with these Design Guidelines. The City may retain ownership of the replacement or modified Wireless Support Structure.
  - (ii) If the City has reserved space for future public safety or transportation uses on the City-owned Wireless Support Structure, the replacement or modification must accommodate the future use.

Section 5.11 *Removal or Relocation Required for City Project.*

- (a) Operator shall remove and relocate the permitted Small Cell Facility and/ or Wireless Support Structure at the Operator's sole expense to accommodate construction of a public improvement project by the City.

- (b) If Operator fails to remove or relocate the Small Cell Facility and/ or Wireless Support Structure or portion thereof as requested by the City within 120 days of the City's notice, then the City shall be entitled to remove the Small Cell facility and/or Wireless Support Structure, or portion thereof at Operator's sole cost and expense, without further notice to Operator.
- (c) Operator shall, within 30 days following issuance of invoice for the removal or relocation of a Small Cell Facility and/ or Wireless Support Structure, or any portion thereof, reimburse the City for its reasonable expenses incurred in the removal or relocation (including, without limitation, overhead and storage expenses).

Section 5.12 *Removal Required by City for Safety and Imminent Danger Reasons.*

- (a) Operator shall, at its sole cost and expense, promptly disconnect, remove, or relocate the applicable Small Cell Facility and/ or Wireless Support Structure within the time frame and in the manner required by the City if the City reasonably determines that the disconnection, removal, or relocation of any part of a Small Cell Facility and/ or Wireless Support Structure: (1) is necessary to protect the public health, safety, welfare, or City property; or (2) Operator fails to obtain all applicable licenses, permits, and certifications required by Law for its Small Cell Facility and/or Wireless Support Structure.
- (b) If the City Engineer reasonably determines that there is imminent danger to the public, then the City may immediately disconnect, remove, or relocate the applicable Small Cell Facility and/ or Wireless Support Structure at the Operator's sole cost and expense.

Section 5.13 *Removal/Abandonment of Facilities.*

- (a) Operator shall remove Small Cell Facilities and/or Wireless Support Structures when such facilities are Abandoned regardless of whether or not it receives notice from the City. For purposes of this Section, "Abandoned" means any Small Cell Facilities or Wireless Support Structures that are unused for a period of three hundred and sixty-five (365) days without the Operator otherwise notifying the City and receiving the City's approval. Unless the City sends notice that removal must be completed immediately to ensure public health, safety, and welfare, the removal must be completed within the earlier of sixty (60) days of the Small Cell Facility and/ or Wireless Support Structure being abandoned, or within sixty (60) days of receipt of written notice from the City. When Operator abandons permanent structures in the Right of Way, the Operator shall notify the City in writing of such abandonment and shall file with the City the location and description of each Small Cell Facility and/ or Wireless Support Structure abandoned. Prior to removal, Operator must make Application to the City and receive approval for such removal. Operator must obtain a Construction Permit for the removal. The City may require the Operator to complete additional remedial measures necessary for public safety and the integrity of the Right of Way.
- (b) The City may, at its option, allow a Wireless Support Structure to remain in the Right of Way and coordinate with the owner to transfer ownership of such Wireless Support Structure to the City

Section 5.14 *Restoration.* Operator shall repair any damage to the Right of Way, any

facilities located within the Right of Way, and/or the property of any third party resulting from Operator's removal or relocation activities (or any other of Operator's activities hereunder) within ten (10) calendar days following the date of such removal or relocation, at Operator's sole cost and expense. Restoration of the Right of Way and such property must be to substantially the same condition as it was immediately before the date Operator was granted a Permit for the applicable location, or did the work at such location (even if Operator did not first obtain a Permit). This includes restoration or replacement of any damaged trees, shrubs, or other vegetation. Such repair, restoration and replacement shall be subject to the sole, reasonable approval of the City.

Section 5.15 *As-Built Maps and Records*

- (a) Operator shall maintain accurate maps and other appropriate records, including an inventory, of its Small Cell Facilities and Wireless Support Structures as they are actually constructed in the Right of Way or any other City-owned property. The inventory shall include GIS coordinates, date of installation, type of Wireless Support Structure used for installation, the Wireless Support Structure owner, and description/type of installation for each Small Cell Facility and Wireless Support Structure.
- (b) Upon City's written request, Operator shall provide a cumulative inventory within thirty (30) days of City's request. Concerning Small Cell Facilities and Wireless Support Structures that become inactive, the inventory shall include the same information as active installations in addition to the date the small Cell Facility and/ or Wireless Support Structure was deactivated and the date the Small Cell Facility and/or Wireless Support Structure was removed from the Right of Way. The City may compare the inventory to its records to identify any discrepancies.

Section 5.16 *Generally Applicable Health and Safety Regulations.* All Small Cell Facilities and Wireless Support Structures shall be designed, constructed, operated and maintained in compliance with all generally applicable health and safety regulations, including without limitation all applicable federal, state and local regulations for human exposure to RF emissions.

Section 5.17 *Tree Maintenance.* Operator, its contractors, and agents shall obtain written permission from the City before trimming trees in the Right of Way hanging over its Small Cell Facility and/ or Wireless Support Structure to prevent branches of such trees from contacting attached Small Cell Facility. When trimming such trees on private property, the Operator, its contractors, and agents shall notify the City and obtain written permission from the property owner. When directed by the City, Operator shall trim under the supervision and direction of the City. The City shall not be liable for any damages, injuries, or claims arising from Operator's actions under this section.

Section 5.18 *Minor Technical Exceptions.* The City recognizes that in some circumstances strict compliance with these guidelines may result in undesirable aesthetic outcomes and that minor deviations should be granted when the need for such deviation arises from circumstances outside the Applicant's control.

Section 5.19 *Waivers.* In the event that any Applicant demonstrates that strict compliance with any provision in these guidelines, as applied to a specific proposed Small Cell Facility, would prohibit, or effectively prohibit, the provision of Wireless Service, the City may grant a limited, one-time exemption from strict compliance.