

## **ENGINEERING DESIGN STANDARDS FOR PUBLIC WORKS SMALL WIRELESS FACILITY**

Small wireless facility (SWF), as defined in CMC 18.35.020, is permitted in the public rights-of-way of the City, subject to the following Design Standards, issuance of an encroachment permit and, when applicable, a building permit. The wireless service and/or infrastructure provider must also have a municipal master permit, franchise, or other applicable authorization to use the right-of-way, and an agreement or permit to attach to City-owned structures. Proposed DAS systems in the public rights-of-way are also subject to these design standards.

All SWF shall meet the height and size limitations in the definition of “small wireless facilities” in CMC 18.35.020.

As used herein, “decorative pole” means a City structure that is specially designed and placed for aesthetic purposes and on which no appurtenances or attachments, other than a SWF, lighting, specially designed informational or directional signage or temporary holiday, or temporary holiday or special events attachments, have been placed or are permitted to be placed according to nondiscriminatory standards.

See CMC 18.35.020 for the definitions of “utility support structure,” “antenna,” and other wireless terms used herein.

A. SWF Attached to Wooden Utility Support Structures. SWF attached to existing or replacement wooden utility support structures shall conform to the following design criteria, to the extent technically feasible:

1. The utility support structure at the proposed location may be replaced with a taller structure for the purpose of accommodating a SWF; provided, that the replacement structure shall not exceed a height that is a maximum of 10 feet taller than the existing structure or the height permitted by the definition of SWF, whichever is greater, unless a further height increase is required and confirmed in writing by the structure owner, and such height extension is the minimum extension necessary to provide sufficient separation and/or clearance from electrical and wireline facilities. Replacement wooden utility support structures may either match the approximate color and materials of the replaced structure, or shall be the standard new wooden utility support structure used by the structure owner in the City.
2. A pole extender may be used instead of replacing an existing utility support structure, but may not increase the height of the existing structure by more than 10 feet or the height permitted by the definition of SWF, whichever is greater, unless a further height increase is required and confirmed in writing by the structure owner, and such height extension is the minimum extension necessary to provide sufficient separation and/or clearance from electrical and wireline facilities. The pole extender shall be painted to approximately match the color of

the structure and shall substantially match the diameter of the utility support structure as measured at its top. A “pole extender” means an object affixed between the utility support structure and the antenna for the purpose of increasing the height of the antenna above the utility support structure.

3. To the extent technically feasible, antennas, antenna equipment, equipment enclosures, and all ancillary equipment, boxes, and conduit shall be colored or painted to match the approximate color of the surface of the utility structure on which they are attached.
4. Panel antennas shall not be mounted more than 12 inches from the surface of the utility support structure, unless an additional distance is required by the utility support structure owner, and shall not exceed three cubic feet in volume.
5. A canister antenna may be mounted on top of an existing or replacement utility support structure, which must not exceed the height requirements described in subsection (A)(1) above. A canister antenna mounted on the top of a utility support structure shall not exceed the diameter of the utility support structure by more than 12 inches or be 16 inches in diameter, whichever is greater, and to the extent technically feasible, shall be colored or painted to match the structure. The canister antenna must be placed to look as if it is an extension of the utility support structure. In the alternative, the applicant may install a side-mounted canister antenna, so long as the inside edge of the antenna is no more than 12 inches from the surface of the utility support structure. To the extent technically feasible, all cables shall be concealed either within the canister antenna or within a sleeve between the antenna and the utility support structure.
6. An omni-directional antenna may be mounted on the top of an existing or replacement utility support structure, which may not exceed the height requirements described in subsection (A)(1) above, provided such antenna is no more than three cubic feet in volume and is mounted directly on the top of a utility support structure or attached to a sleeve made to look like the exterior of the structure as close to the top of the structure as technically feasible. To the extent technically feasible, all cables shall be concealed within the sleeve between the bottom of the antenna and the mounting bracket.
7. All related antenna equipment, including but not limited to ancillary equipment, radios, cables, associated shrouding, disconnect boxes, meters, microwaves, and conduit, which is mounted on utility support structures shall not be mounted more than six inches from the surface of the structure, unless a further distance is required by the utility support structure owner.
8. Antenna equipment for SWFs must be attached to the utility support structure, unless otherwise permitted to be ground-mounted pursuant to subsection (D)(1) below. The equipment must be placed in the smallest enclosure(s) feasible for the intended purpose. The equipment enclosure(s) and all other wireless equipment associated with the utility support structure, including wireless equipment associated with the antenna and any preexisting associated equipment on the utility support structure, may not exceed 28 cubic feet. Multiple equipment enclosures are acceptable if designed to more closely integrate with the SWF design; provided, that said multiple enclosures must not cumulatively exceed 28 cubic feet. The applicant is encouraged to place the equipment

enclosure(s) behind any banners or road signs that may be on the utility support structure.

9. An applicant who desires to enclose both its antennas and antenna equipment within one enclosure may do so; provided, that such enclosure is the minimum size necessary for its intended purpose, and the enclosure and all other wireless equipment associated with the utility support structure, including wireless equipment associated with the antenna and any preexisting associated equipment on the structure, do not exceed 28 cubic feet. To the extent feasible, the unified enclosure shall be placed so as to appear as an integrated part of the utility support structure or behind banners or signs. The unified enclosure may not be placed more than six inches from the surface of the utility support structure, unless a further distance is required and confirmed in writing by the structure owner. The applicant is encouraged to place the unified enclosure behind any banners or road signs that may be on the utility support structure.
10. All cables shall be routed through conduit along the outside of the utility support structure. The outside conduit shall be colored or painted to match or be compatible with the utility support structure. The number of conduit shall be minimized to the number technically necessary to accommodate the SWF.
11. The diameter of a replacement utility support structure shall comply with the City's setback and sidewalk clearance requirements and, to the extent technically feasible, shall not be more than a 25 percent increase of the existing utility support structure, as measured at the base of the structure.
12. Glulam utility support structures are specifically prohibited.

B. SWF Attached to Non-Wooden Utility Support Structures. SWF attached to existing or replacement non-wooden utility support structures shall conform to the following design criteria, to the extent technically feasible:

1. Antennas, antenna equipment and associated equipment enclosures (including disconnect switches and other appurtenant devices), conduit and fiber shall be fully concealed within the utility support structure, unless such concealment is technically infeasible or is incompatible with the utility support structure design, in which case the antennas, antenna equipment, and associated equipment enclosures must be camouflaged to appear as an integral part of the utility support structure or flush-mounted to the structure, meaning no more than six inches off of the structure, and must be the minimum size necessary for the intended purpose, not to exceed the volumetric requirements for SWF. If an equipment enclosure is permitted on the exterior of the utility support structure, the applicant is required to place the equipment enclosure behind any banners or road signs that may be on the structure.
2. Any replacement utility support structure shall substantially conform to the existing neighboring support structure design standards utilized within the contiguous right-of-way and shall require city approval.
3. The height of any replacement utility support structure may not extend more than 10 feet above the height of the existing structure, or the height permitted by the

definition of SWF, whichever is greater, unless such further height increase is required and confirmed in writing by the structure owner.

4. The diameter of a replacement utility support structure shall comply with the City's setback and sidewalk clearance requirements and, to the extent technically feasible, shall not be more than a 25 percent increase of the existing non-wooden utility support structure measured at the base of the structure, unless additional diameter is needed in order to conceal equipment within the base of the structure, and shall comply with the requirements in subsection (D)(2) below.
5. A canister antenna on top of an existing or replacement utility support structure may not extend more than six feet above the height of the existing or replacement structure and the diameter may not exceed the diameter of the structure by more than 12 inches or be 16 inches in diameter, whichever is greater, unless the applicant can demonstrate that more space is technically or aesthetically needed.
6. Decorative poles. A wireless provider, through the encroachment permit process, shall be permitted to collocate on or replace a decorative pole when necessary to collocate a small wireless facility; provided that any such replacement pole shall substantially conform to the City's decorative pole design(s). The City prefers that wireless providers install a new structure pursuant to subsection (C), below, instead of using a decorative pole, unless the provider can demonstrate that a new structure is technically infeasible or that use of a decorative pole better minimizes visual impacts.

C. New Structures for SWF. SWF attached to new structures shall conform to the following design criteria, to the extent technically feasible:

1. Antennas, antenna equipment and associated equipment enclosures (including disconnect switches and other appurtenant devices), conduit and fiber shall be fully concealed within the structure, unless such concealment is otherwise technically infeasible, or is incompatible with the structure design, then the antennas and associated equipment enclosures must be camouflaged to appear as an integral part of the structure or flush-mounted to the structure, meaning no more than six inches off of the structure, and must be the minimum size necessary for the intended purpose, not to exceed the volumetric requirements for SWF.
2. To the extent technically feasible, all new structures and structure-mounted antennas or equipment shall be painted or colored with flat, non-reflective colors or shades of either black, brown or grey that blend with the visual environment.
3. The City prefers that wireless providers install SWF on existing or replacement utility support structures (except decorative poles) instead of installing new structures, unless the provider can demonstrate that installation on an existing or replacement utility support structure (except decorative poles) is technically infeasible or otherwise not possible (due to a lack of owner authorization, safety considerations, or other reasons acceptable to the Director).

D. General Requirements. All SWF shall conform to the following design criteria, to the extent technically feasible:

1. Ground-mounted equipment in the right-of-way is prohibited, unless such equipment is placed underground, or the applicant can demonstrate that utility support structure-mounted equipment and undergrounding are technically infeasible. If ground-mounted equipment is necessary, then the applicant shall submit a plan showing an appropriate design to mitigate the visual impacts of the equipment and meet the location requirements of subsection (D)(2), below. Generators located in the right-of-way are prohibited.
2. Replacement utility support structures and new structures shall comply with the Americans with Disabilities Act (ADA), City construction and sidewalk clearance standards, and City, state and federal laws and regulations in order to provide a clear and safe passage within the right-of-way. Further, the location of any replacement or new structure must be physically possible, comply with applicable traffic warrants, not interfere with utility or safety fixtures (e.g., fire hydrants, traffic control devices), and not adversely affect public health, safety or welfare.
3. Replacement utility support structures shall be located as near as possible to the existing structure with the requirement to remove the abandoned structure.
4. Any replacement utility support structure shall substantially conform to the design of the structure it is replacing or the neighboring structures in the contiguous right-of-way, unless otherwise approved by the Director.
5. No signage, message, or identification other than signs required by law and the manufacturer's identification is allowed to be portrayed on any SWF and its support structure, and any such signage shall be of the minimum amount possible to achieve the intended purpose and comply with applicable law; provided, that signs are permitted as concealment techniques where appropriate.
6. Antennas and antenna equipment shall not be illuminated except as required by a federal or state authority, or unless approved as part of a light standard.
7. Side arm mounts for antennas or antenna equipment must be the minimum extension necessary, but in any case, no more than 12 inches off the utility support structure for wooden utility support structures, and no more than six inches off the utility support structure for non-wooden utility support structures, as measured from the surface of the utility support structure to the inside edge of the antennas or equipment.
8. Designs for SWFs located on existing or replacement City-owned utility support structures may deviate from the design standards in this section, provided such deviations are approved as part of a lease or other agreement between the applicant and the City.