

# WIRELESS DESIGN MANUAL

## I. OVERVIEW

- A. The purpose of this wireless design manual is to set out standards for placement of wireless facilities off the rights of way within the City of Pacific Grove (City). The standards adopted here will be applied in deciding whether a use permit should be granted for all wireless telecommunications facilities, other than “eligible facilities requests,” which are requests for modifications of existing wireless facilities that do not substantially change the physical dimensions of those facilities. However, in deciding whether a project is an eligible facilities request, the City will apply principles in this manual to determine whether concealment elements of an existing facility are being defeated.

The wireless design manual shall prescribe designs for installation and modification of wireless telecommunications facilities consistent with the Pacific Grove Municipal Code (PGMC or Code) and the City’s General Plan, so that permitted wireless telecommunications facilities are installed and modified in a manner that minimizes the impacts on the community, conceals the facilities as far as possible, avoids risks to public safety and complies with applicable law, avoids placement of aboveground facilities in underground areas, and maintains the integrity and character of the neighborhoods in which the facilities are located.

- B. In addition to complying with this wireless design manual, an applicant must also comply with the provisions of the PGMC. The Code does not permit placement of wireless facilities off the rights-of-way in certain districts unless an applicant shows the City is required by law to issue the permit. At the time this design manual is written, an applicant would be required to show that denial would result in an effective prohibition, or is unreasonably discriminatory. There are exceptions for certain types of property and certain structures within those districts, and an applicant will be expected to explore options for using those properties.
- C. The issuance of a wireless use permit is not a determination by the City that an applicant has the necessary property rights to occupy the structure or land as proposed. It is strictly up to the applicant to identify property lines and to conduct the work required to ensure that it can install its facilities at the location proposed. Likewise, issuance of the permit does not insulate the applicant from claims of trespass or nuisance, or similar claims that may be brought against the applicant, or damages claims based on radio frequency (RF) exposures. Likewise, while the City will attempt to identify risks and hazards associated with the facility, applicant is ultimately liable if it builds a facility that is unsafe, and that results in harm to persons or property.
- D. Likewise, the wireless use permit is not in lieu of other permits that may be required under the City Code. For example, a building or excavation permit may be required, depending on what is proposed.
- E. The placement of wireless telecommunications facilities is subject to the California

Environmental Quality Act (CEQA), and before the City can issue any permit, it will be required to determine what further actions or investigations are required under CEQA. Applicant will be required to provide the information necessary to make CEQA determinations, and applicant may be required to conduct certain studies, particularly if a facility is proposed that would require excavation in an area where there may be important historical or archaeological resources. An applicant should be examining these issues before an application is submitted, to minimize the delay in consideration of any application.

- F. When applying for a wireless telecommunications facility permit, applicant must use a form provided by the City, and must fill out the form completely. The City will not consider an application until it is complete, even if the proposed facility otherwise complies with this manual.
- G. If an applicant believes that any provision of this manual should not be applicable, or if any application requirement should not apply, applicant may ask the City to waive the requirement for good cause. The request must be submitted *before and separate from any application*.

## II. GUIDING PRINCIPLES

In developing designs, and in reviewing applications for conformance with these standards, the City will consider the following:

- A. **Impact Minimization.** Has the applicant minimized the overall impact of each element of the wireless telecommunications facility? Generally, City staff will be looking at whether the facility uses the smallest possible design. However, there are several exceptions to this rule. The preference is for antennas to be placed on existing macro-facilities, or inside existing structures, where no modification is required to the existing structure. Likewise, a larger facility may be appropriate if it is a concealed facility, and the proposed concealment is consistent with the surrounding neighborhood.
- B. **Integration (Concealment) is required** – Integration is how each part of a site fits together. Well-integrated sites have wireless telecommunications facilities that are as concealed as possible on the site. Concealment is the level to which the components of a wireless telecommunications facilities are hidden from view. It is a function of the appearance, placement, context, and level of visibility. Depending on the site, a change in any of these elements may defeat concealment. New wireless telecommunications facilities and modifications to existing facilities (other than eligible facilities requests) should be integrated (concealed) into a site. Because they do not represent the smallest, least visually intrusive antennas, components, and other necessary equipment, non-integrated (unconcealed) installations are discouraged. There are a wide range of acceptable integration/concealment methods. Every aspect of a site is considered an element of concealment including (but not limited to) the dimensions, build and scale, color, shape, density of concealing elements, materials and texture. Future modifications to a site must not defeat concealment. A wireless telecommunications facility's size, shape, number of antennas, dimensions, color, texture, offset, azimuth, height, location on a site and

location on a structure all contribute to how concealed the site is. A change in any of these elements that makes the site more visible than it was previously is defeating concealment. To judge how well-integrated a site is (how well it is concealed), the City relies on three principles. Each influences the other, and together they determine how integrated a site is:

1. Balance – All visible elements should have symmetry in all visible dimensions. Antennas and concealment elements should not dominate the element they are placed on. Examples of Balance include, but are not limited to:
  - a. Visible antennas should be (or have the appearance of being) equal in length, width, and depth and should be evenly spaced on their support structure.
  - b. Visible equipment should be grouped in like size and should also be evenly spaced on the support structure in a way that compliments the symmetry of antennas.
  - c. Visibly-placed concealment elements (items that conceal wireless telecommunications facility elements but are themselves visible) should also observe this principle. This may require the bilateral symmetry of faux architectural elements or screen boxes, such as adding cupolas or faux chimneys to both sides of a façade instead of one, or raising parapets at two corners of a façade instead of one, etc.
  - d. Antennas and shrouds should not dominate the element they are placed on. This is especially relevant to vertical elements such as light standards, flagpoles, and similar fixtures. Depending on the context, balance/symmetry may NOT be desired in certain situations. However, it should always be assumed that symmetry is necessary, and the greatest possible amount of symmetry/balance should always be provided. A balanced site will appear uniform and is considered less visually obtrusive than one that lacks balance.
2. Context– Specific situations require specific design solutions. What integrates well into one site may not be appropriate for another. Select the best design solution based on site and project characteristics. Examples of the Context include, but are not limited to:
  - a. A faux tree may be appropriate if there are other mature trees of a similar height in the vicinity, but may not be if there aren't.
  - b. A cupola may be appropriate for certain styles of architecture, but not for others.
  - c. Façade-mounted antennas may be appropriate for certain styles of architecture, but not for others.

- d. Concealment behind a parapet is good, but designs that only raise part of the parapet may not be.
- f. A faux chimney may be acceptable, but too many of them on a building may not.
- g. An eight-foot-tall rooftop box may look appropriate on a three-story industrial building, but not on a one-story liquor store.

A wireless telecommunications facility that fits into its context (a faux tree within an area with many trees) is more integrated (concealed) than one that doesn't (a faux tree in the middle of a non-landscaped parking lot). Changing the context of a site can change its level of concealment.

3. Least Visibility - The least visible solution is best. Placement on the site should be as minimally visible as possible. Examples of Least Visibility include, but are not limited to:
  - a. Wireless telecommunications facilities should not be located between buildings and the street. They should be concealed on existing buildings, or ground-mounted adjacent to the side or rear of existing buildings.
  - b. Unless a site is architecturally integrated, visibility of wireless telecommunications facilities elements from the public right-of-way is not desirable, regardless of level of concealment.
  - c. Façade-concealed antennas are preferred over façade-mounted antennas.
  - d. Integration into architectural elements is preferred over covering antennas with something (i.e., appearing flush with a wall or hiding in a cupola is better than concealment behind a façade-mounted box). Design elements of existing façades should be replicated.
  - e. Concealment within a structure is preferred over visible mounting (façade mounts or faux trees).
  - f. Covering or painting the antennas doesn't mean they're well-concealed. Concealment methods can themselves be visible (antenna skirts, fiberglass paneling (FRP) boxes, etc.). For example, even if it covers the antennas, a large, untapered FRP box can call attention to a facility.
  - g. Complete concealment is preferred over other methods.
  - h. RF safety barriers should be the least visible barrier possible. When possible, striping and restricted access should be used instead of posts, chains and/or fencing. When barriers must be visible, select building materials that integrate into the site. RF reports should consider alternative options. Photo simulations and plans should show proposed barriers and

signage. The less visible a facility is, the more integrated/concealed it is. Increasing visibility reduces/defeats concealment.

Anything that is represented on plans and photo simulations as providing concealment (adjacent landscaping, paint colors, architectural elements, etc.) shall be present for the life of the project, and so must be in an area within the applicant's control.

- C. Cooperative Design. The application process works best when the applicant meets with the City, discusses network plans, identifies areas where facilities are needed outside of the application process, and works with the community. A cooperative process permits all parties to identify areas where there are likely to be significant issues, to determine whether there are viable solutions, and to ensure that everyone understands what is being proposed, and can fairly evaluate its impacts.

### III. SPECIFIC DESIGN STANDARDS

#### A. General standards.

1. The proposed wireless telecommunications facility, and its supporting structure (to the extent installation requires installation of a supporting structure, or any change in the height of an existing supporting structure) must be of the minimum size necessary to serve the defined service objectives of the provider or providers that will be using the facility, except where a larger facility is a Concealed Facility whose design is approved by the City, or appropriate as part of the incorporation of a wireless telecommunications facility into a structure such as a lighting structure in a parking area, where the facility must mimic the height of other lighting structures.
2. Wireless telecommunications facilities shall incorporate concealment measures appropriate for the proposed location. All facilities shall be designed to visually blend into the surrounding area in a manner compatible with the local community character, and shall be designed so that the supporting structure and the wireless telecommunications facility are of a height, dimension, and design consistent with the other structures in the surrounding area, to the extent visible to the public.
3. Wireless telecommunications facilities shall not unreasonably impair or diminish views of and vistas from scenic public corridors. Wireless telecommunications facilities will be placed to minimize visual impacts on residential, historic and areas protected for their scenic beauty under the general plan.
4. Wireless telecommunications facilities may not encroach into any applicable setback for structures in the applicable zoning district.
5. A wireless telecommunications facility, including ancillary power generation equipment, shall comply with the noise standards in the City Code and shall include noise attenuating or baffling materials and/or other measures, including but not limited to walls or landscape features, as necessary or appropriate to

ensure compliance with noise limits.

6. Except for facilities where lighting is required under Federal Aviation Administration (FAA) regulations, applicants may not install lights absent a showing of a substantial public safety need, or where a design is intended to mimic or be incorporated within lighting structures on the property where the facility will be located. Any lighting that is permitted shall minimize adverse illumination impacts to the maximum extent feasible consistent with the purpose of the lighting and the surrounding environment.
7. No wireless telecommunications facilities may display any signage or advertisements unless expressly allowed by the City in a written approval, recommended under FCC regulations, or required by law or permit condition. Every facility shall at all times display signage that accurately identifies the facility owner and provides the facility owner's unique site number, and also provides a local or toll-free telephone number to contact the facility owner's operations center. "Signage" does not include approved banners or other approved signage used to conceal a wireless telecommunications facility, and consistent with local code provisions governing signage.
8. Wireless telecommunications facilities shall be secured by placement or fencing to prevent harm to the public or damage to the facility, except where the same would defeat the concealment elements proposed, as in the case of a wireless telecommunications facility integrated into a dedicated light structure, or where, because of placement, fencing is not required to protect the public or the facility. Any fencing or enclosures proposed in connection with a wireless telecommunications facility shall blend with the natural and/or manmade surroundings and comply with §23.64.130, as may be amended. Additional landscape features may be required to screen fences.
9. Landscaping may be required to screen facilities from adjacent properties or public view or to provide a backdrop to conceal the facilities. All proposed landscaping is subject to approval by the appropriate review authority. All landscaping plans shall include a long-term maintenance and irrigation schedule.
10. Applicants must use flat rate electric metering, if available, so that no meter is required in any case where a meter otherwise would be ground-mounted or pole-mounted. If a ground-mounted or pole-mounted meter is used, applicant will use the smallest form factor metering device available, except where that use would conflict with the other standards in this manual.
11. The wireless telecommunications facility, unless a Concealed Facility or integrated into a lighting structure or similar existing structure, should not be visible to the public from an historic area or from the Coastal zone.
12. All utilities serving a wireless telecommunications facility shall be placed underground from the right-of-way to the facility and concealed to the extent

possible within the supporting structure. In areas where all utilities on a lot are required to be undergrounded, all elements of the wireless facility shall be placed underground except the antenna, and the tower or other supporting structure on which it is placed. For facilities on rooftops or on buildings, the wiring should not be visible to the public, or must be integrated with utilities already serving the structure.

**B. Building-Mounted Facilities.** These requirements are in addition to design standards in Section III.A.

1. Building-mounted wireless telecommunications facilities should be one of the following, in this order of preference; provided that modifications to historic buildings must be consistent with PGMC Chapter 23.76.
  - a. The wireless telecommunications facilities must be completely concealed and architecturally integrated into the facade or rooftop-mounted base stations with no visible impacts from any publicly accessible areas at ground level (examples include, but are not limited to, antennas behind existing parapet walls or facades replaced with RF-transparent material and finished to mimic the replaced materials); and if that is not possible, then
  - b. Wireless telecommunications facilities may be completely concealed by new structures or appurtenances designed to mimic the support structure's original architecture and proportions (examples include, but are not limited to, cupolas, steeples, chimneys and water tanks), so that the support structure remains consistent in size and design with the areas within which it is located. The propriety of a particular change will be assessed applying standards that apply for similar discretionary modifications that do not involve wireless telecommunications facilities, and as reflected in the principles in Part II.
2. Where the preferred options are not feasible, unscreened rooftop wireless telecommunications facilities and supporting structures may only be developed when they are of low enough height and setback from the roofline so that the equipment is effectively concealed from public view from ground level. Equipment may not be placed on a rooftop where the rooftop is less than 20 feet above ground level.

**C. Facade-Mounted Equipment.** In addition to satisfying the requirements of subsection III.A:

1. Façade-mounted equipment should be integrated architecturally into the structure to which the equipment will be attached, applying the principles set out in Part II.
2. Where integration is not possible, a facade-mounted wireless telecommunications facility should be behind screen walls as flush to the facade as practicable, designed to conceal the wireless telecommunications facility so that it appears to

be part of the façade design. Pop-out screen boxes do not meet this standard, unless such design is architecturally consistent with the original support structure. An exposed, facade-mounted wireless telecommunications facilities will not be approved unless it is shown that, because of the size or design of the facility, or the design or location of the structure to which it is to be attached, the proposed facility would have no adverse visual impacts.

- D. Ground-Mounted Equipment. In addition to satisfying the requirements of subsection III.A: Outdoor ground-mounted equipment associated with base stations shall be avoided whenever feasible. In locations visible or accessible to the public, applicants shall conceal outdoor ground-mounted equipment, including ancillary power generation equipment, with opaque fences or landscape features that mimic the adjacent structure(s) (including, but not limited to, dumpster corrals and other accessory structures).
- E. Freestanding Wireless Towers Outside of Rights-of-Way. In addition to satisfying the requirements of subsection III.A:

As appropriate for the proposed location, new wireless towers shall be designed according to the following preferences, ordered from most preferred to least preferred:

1. Concealed architectural structures including, but not limited to, sculptures, clock towers, and flagpoles of a size, type and proportions, and with design features consistent with the neighborhood and adjacent structures; then
2. Concealed natural objects, such as wireless telecommunications facilities designed to appear like trees of a size, type and proportions consistent with nearby trees, and landscaped and located near other vegetation to blend in and appear part of the natural environment; then
3. All tower-mounted equipment shall be mounted as close to the vertical support structure as possible, or integrated within it to reduce its visual profile. Applicants shall mount non-antenna, tower-mounted equipment (including, but not limited to, remote radio units/heads, surge suppressors, and utility demarcation boxes) directly behind and concealed by the antennas themselves to the maximum extent feasible, and to the extent not inconsistent with the concealment elements
4. All equipment should generally be incorporated into the design of a tower proposed. Where that is not technically feasible, and unless undergrounded, applicants shall conceal ground-mounted equipment with opaque fences or other opaque enclosures, or the ground-mounted equipment shall incorporate other concealment designs appropriate to the neighborhood and to the overall design of the wireless telecommunications facility. The City shall require design and/or landscape features in addition to other concealment when necessary to blend the equipment or enclosure into the surrounding environment.
5. The lease or license area shall be large enough to accommodate the concealment elements, landscaping and other elements required for the facility.



#### IV. CONDITIONS

- A. City may condition any approval on compliance with design standards, and as necessary or appropriate so as to minimize impacts of the wireless telecommunications facility on the public and property, and as required to ensure that the proposed facility is constructed and maintained in compliance with mandatory conditions and the conditions of approval. The conditions shall at a minimum:
1. Limit the term of the permit to 10 years.
  2. Provide that the facility shall be subject to inspection by the City.
  3. Require that the facility be maintained in strict compliance with all conditions. This includes, without limitation, the duty to ensure that any damage to concealment elements is promptly repaired, or any change in appearance due to weathering or any cause, natural or unnatural, is promptly addressed so that the wireless telecommunications facility is restored to its condition as approved.
  4. Provide for testing and inspection of the facility, at the expense of the entities that own or use the facility in connection with the provision of personal wireless services.
  5. Require removal of the facility, and the restoration of impacted property in the event that it is non-operable for a six-month period; or the permit expires; or it is revoked for non-compliance with approval terms.
  6. Permit the City to require the facility to cease operation if not in compliance with applicable law, or if it presents a threat to persons or property.
  7. Include such other conditions as the City may normally attach to a permit, including requirements for maintenance of insurance.

#### V. SPECIAL RULES FOR TEMPORARY WIRELESS TELECOMMUNICATIONS FACILITIES

- A. The proposed facility must comply with all applicable laws and regulations, and submit proof of compliance, as proposed for use, with Federal Communications Commission regulations governing RF emissions.
- B. The proposed facility shall be placed and protected to prevent hazard to the public and property, and so as not to unreasonably interfere with pedestrian or vehicular traffic.
- C. The facility complies with all conditions for a temporary wireless telecommunications facility, and there is an appropriate plan for removal of the facility and restoration of property affected by it.
- D. The permit is sought for the minimum period required, and no greater than the maximum period permitted by the PGMC.

- E. Any permit issued shall identify where the temporary wireless telecommunications facility will be placed, and the period for which it may remain in place.